

10/017,186

REMARKS

Applicant wishes to thank the Examiner for the attention accorded to the instant application.

Claims 1-2, 4-9 and 16-19 are pending in the application.

I. Specification

The Examiner has objected to the specification, specifically objecting to misidentified figure 1A and 1B. Applicant has addressed the Examiner's objection with an amendment to the specification. Applicant wishes to thank the Examiner for the suggested change.

The Examiner has objected to the title of the application as being not descriptive. Applicant has changed the title to "DEVICE FOR HANDLING FRAGILE OBJECTS" and submit the amended title for Examiner approval.

II. Claim Rejections – 35 U.S.C. §112

The Examiner has rejected claims 2, 4-6, 8 and 9 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which is regarded as the invention.

Specifically, in claims 2 and 4-6, the Examiner contends that there is no antecedent basis for the limitation "the frequency of the openings." Applicant has amended claim 2 to clarify use of the term "frequency."

The Examiner states that the language of claims 8 and 9 are vague and indefinite. The Examiner states that the limitations "combinations comprising at least one of the

10/017,186

foregoing material" is confusing. Applicant has amended claims 8 and 9 to eliminate the limitation in question.

III. Claim Rejections – 35 U.S.C. §102

The Examiner has rejected claims 1-2, 4-7 and 16 under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 5,967,577 to Bhandarkar et al. ("Bhandarkar") and U.S. Patent No. 6,336,492 to Nagaoka ("Nagaoka"). The Examiner has rejected claims 1-2, 4-6 and 16 under 35 U.S.C. §102(b) as being anticipated by Bhandarkar. The Examiner has rejected claims 1-2, 4-7 and 16 under 35 U.S.C. §102(e) as being anticipated by Nagaoka.

Applicant has amended independent claims 1 and 16 to more particularly point out and distinctly claim the subject matter of the invention. In particular, claim 1 has been amended to recite that the body is "for applying a vacuum holding force" to an object. Claim 16 has been amended similarly. The present invention, as recited in the claims, is directed to a handler for applying a vacuum holding force to an object. The handler is comprised of a body for applying a vacuum force which includes a plurality of level openings at various levels where the openings at the suction surface level are larger than the openings at the holding surface level and the openings are in fluid communication with at least a portion of openings at the holding surface level.

In contrast, Bhandarkar is directed to an apparatus for dispensing fluid in an array pattern. Bhandarkar is directed to a dispenser used for dispensing fluids. There is no teaching or suggestion in Bhandarkar to use a vacuum holding force or even mention of a

10/017,186

vacuum in handling fragile materials. Therefore, Bhandarkar does not teach or suggest a handler or handler body for applying a vacuum holding force.

Similarly, Nagaoka is directed to a mounting head apparatus which incorporates a vacuum pump. The Examiner states that Figure 5 teaches openings 27 at the suction level that are larger than the openings at the holding level. As stated in Nagaoka, opening 27 is characterized as an internal space.

The connection chamber 12 of the mounting head apparatus 1 is formed by drilling substantially the central portion of a metal block in the form of a substantially rectangular parallelepiped shape into a substantially cylindrical form so that an internal space 27 is formed. Then, one side surface of the metal block is drilled to have a predetermined width so that a groove 28 is formed through which a portion of the internal space 27 is exposed to the outside. Nagaoka column 5 lines 31-36.

Nagaoka only teaches the internal space within the chamber as a parallel pipe cylindrical form. Even if the internal space can be characterized as an opening, there is no teaching or suggestion in Nagaoka for more than one opening. Additionally, Nagaoka does not teach or suggest that these openings are at a suction surface level. Since Nagaoka does not teach or suggest all of the limitations of amended independent claims 1 and 16, Applicant respectfully submits that claims 1 and 16 are allowable over Nagaoka.

A single reference must teach or disclose all of the limitations of the claims in order to anticipate. Since neither Bhandarkar nor Nagaoka teach or disclose all of the limitations of claims 1 and 16, Applicant respectfully submits that claims 1 and 16 are patentable over the cited references. Claims 2 and 4-7, by their dependency on amended claim 1, are similarly allowable. Early notice to that effect is earnestly solicited.

IV. Claim Rejections – 35 U.S.C. §103

10/017,186

The Examiner has rejected claims 7-9 and 17-19 as being unpatentable over various combinations of Bhandarkar, Nagaoka and U.S. Patent No. 5,564,682 to Tsuji ("Tsuji").

As previously stated, the present invention, as recited in amended claims 1 and 16, is directed to a handler for applying a vacuum holding force to an object. The handler is comprised of a body for applying a vacuum force which includes a plurality of level openings at various levels where the openings at the suction surface level are larger than the openings at the holding surface level and the openings are in fluid communication with at least a portion of openings at the holding surface level.

In contrast, Bhandarkar is directed to an apparatus for dispensing fluid in an array pattern. Bhandarkar is directed to a dispenser used for dispensing fluids. There is no teaching or suggestion in Bhandarkar to use a vacuum holding force or even mention of a vacuum in handling fragile materials. Therefore, Bhandarkar does not teach or suggest a handler or handler body for applying a vacuum holding force.

Similarly, Nagaoka is directed to a mounting head apparatus which incorporates a vacuum pump. The Examiner states that Figure 5 teaches openings 27 at the suction level that are larger than the openings at the holding level. As stated in Nagaoka, opening 27 is characterized as an internal space.

The connection chamber 12 of the mounting head apparatus 1 is formed by drilling substantially the central portion of a metal block in the form of a substantially rectangular parallelepiped shape into a substantially cylindrical form so that an internal space 27 is formed. Then, one side surface of the metal block is drilled to have a predetermined width so that a groove 28 is formed through which a portion of the internal space 27 is exposed to the outside. Nagaoka column 5 lines 31-36.

10/017,186

Nagaoka only teaches the internal space within the chamber as a parallel pipe cylindrical form. Even if the internal space can be characterized as an opening, there is no teaching or suggestion in Nagaoka for more than one opening. Additionally, Nagaoka does not teach or suggest that these openings are at a suction surface level.

Similarly, Tsuji is directed to a wafer stage apparatus for attaching and holding semiconductor wafers. Although Tsuji is directed to a wafer stage coupled with a vacuum line, with electromagnetic valves. Significantly, Tsuji does not teach or suggest multiple stages or variations in opening sizes between stages.

The Examiner is reminded that to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references) must teach or suggest all of the claim limitations. In re Vaeck, 947 F.2d 488 (Fed. Cir. 1991).


As stated previously, neither Bhandarkar, Nagaoka, nor Tsuji teach or suggest all of the claim limitations of claims 1 and 16. Since the cited references do not teach or suggest all of the claim limitations, either alone or in combination with each other, a prima facie case of obviousness has not been set forth. Applicants, therefore, respectfully submit that claims 1 and 16 are allowable over the cited references. Claims 7-9, by their dependency on amended claim 1, and claims 17-19, by their dependency on amended claim 16, are similarly allowable.

10/017,186

V. Conclusion

For the foregoing reasons, Applicants respectfully submit that all pending claims 1-2, 4-9 and 16-19 are now in condition for allowance. Early notice to that effect is earnestly solicited.

Respectfully submitted,

By: 
Bosco B. Kim
Registration No. 41,896

Date: January 29, 2004
REVEO, INC.
85 Executive Boulevard
Elmsford, New York 10523
Telephone (914) 345-9555
Facsimile: (914) 345-9558